

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): Solder pads for improving reliability of a package, the package
5 comprising a substrate, the solder pads comprising:
a plurality of first solder pads positioned on a surface of the substrate, each of the first solder pads having a first diameter; and
at least a second solder pad positioned on a
10 ~~predetermined~~ corner region of the substrate surface, the second solder pad having a second diameter greater than the first diameter to sustain a stronger thermal stress and a stronger fatigue strength.

15 Claim 2 (original): The solder pads of claim 1 wherein the substrate comprises a plastic substrate.

Claim 3 (original): The solder pads of claim 1 wherein the substrate comprises a ceramic substrate.

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Claim 4 (original): The solder pads of claim 1 wherein the substrate comprises a printed circuit board (PCB).

Claim 5 (original): The solder pads of claim 1 wherein
25 the substrate comprises a chip.

Claim 6 (currently amended): The solder pads of claim 1 wherein the ~~predetermined~~ corner region comprises a high stress region.

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Claim 7 (original): The solder pads of claim 1 wherein the first solder pads are arranged in a matrix at a

center region of the substrate.

Claim 8 (currently amended): The solder pads of claim
1 wherein the ~~predetermined~~ corner region comprises
5 the corners of the substrate.

Claim 9 (currently amended): The solder pads of claim
1 wherein the ~~predetermined~~ corner region comprises
the circumferences of a plurality of concentric circles
10 on the substrate.

Claim 10 (original): The solder pads of claim 9 wherein
the second solder pads on each of the concentric circle
circumferences are arranged with an equal interval.
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Claim 11 (currently amended): The solder pads of claim
1 wherein the ~~predetermined~~ corner region comprises
the corners of the substrate on an outside portion of
a maximum circle on the substrate.
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Claim 12 (currently amended): The solder pads of claim
1 wherein the ~~predetermined~~ corner region comprises
the circumference of a maximum circle on the substrate.

25 Claim 13 (currently amended): The solder pads of claim
1 wherein the ~~predetermined~~ corner region comprises
at least a grounded solder pad.

Claim 14 (original): The solder pads of claim 1 wherein
30 each of the first solder pads and the second solder
pad comprise a solder bump pad, the solder bump pad
connecting to a solder bump and using the solder bump

to connect to a chip.

Claim 15 (original): The solder pads of claim 14 wherein
an underfill layer is filled in a gap between the chip
5 and the substrate.

Claim 16 (original): The solder pads of claim 1 wherein
each of the first solder pads and the second solder
pad comprise a solder ball pad, the solder ball pad
10 connecting to a solder ball and using the solder ball
to connect to a printed circuit board.

Claim 17 (Currently amended): Solder pads comprising:
a substrate;
15 a plurality of first solder bump pads positioned
on a first surface of the substrate, each of the first
solder bump pads having a first diameter;
at least a second solder bump pad positioned on
a first predetermined region of the first surface, the
20 second ~~bump-solder~~ solder bump pad having a second
diameter greater than the first diameter, each of the
first solder bump pads and the second solder bump pad
being connected to a solder bump that is connected to
a chip;
25 a plurality of first solder ball pads positioned
on a second surface of the substrate, each of the first
solder ball pads having a third diameter; and
at least a second solder ball pad positioned on
a second predetermined region of the second surface,
30 the second solder ball pad having a ~~second~~ fourth
diameter greater than the third diameter, each of the
first solder ball pads and the second solder ball pad

being connected to a solder ball that is connected to
a printed circuit board.

5 Claim 18 (original): The solder pads of claim 17 wherein
the substrate comprises a plastic substrate.

Claim 19 (original): The solder pads of claim 17 wherein
the substrate comprises a ceramic substrate.

10 Claim 20 (original): The solder pads of claim 17 wherein
the first predetermined region and the second
predetermined region comprise a high stress region.

15 Claim 21 (original): The solder pads of claim 17 wherein
the first solder bump pads are arranged in a matrix
at a center region of the substrate.

20 Claim 22 (original): The solder pads of claim 17 wherein
the first predetermined region comprises the corners
on the first surface of the substrate.

25 Claim 23 (original): The solder pads of claim 17 wherein
the first predetermined region comprises the
circumferences of a plurality of concentric circles
on the first surface.

30 Claim 24 (original): The solder pads of claim 23 wherein
the second solder bump pads on each of the concentric
circle circumferences are arranged with an equal
interval.

Claim 25 (original): The solder pads of claim 17 wherein

the first predetermined region comprises the corners of the substrate on an outside portion of a maximum circle on the first surface.

- 5 Claim 26 (original): The solder pads of claim 17 wherein the first predetermined region comprises the circumference of a maximum circle on the first surface.

Claim 27 (Canceled)

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Claim 28 (original): The solder pads of claim 17 wherein the first solder ball pads are arranged in a matrix at a center region of the substrate.

- 15 Claim 29 (original): The solder pads of claim 17 wherein the second predetermined region comprises the corners on the second surface of the substrate.

- Claim 30 (original): The solder pads of claim 17 wherein
20 the second predetermined region comprises the circumferences of a plurality of concentric circles on the second surface.

- Claim 31 (original): The solder pads of claim 30 wherein
25 the second solder ball pads on each of the concentric circle circumferences are arranged with an equal interval.

- Claim 32 (original): The solder pads of claim 17 wherein
30 the second predetermined region comprises the corners of the substrate on an outside portion of a maximum circle on the second surface.

Claim 33 (original): The solder pads of claim 17 wherein the second predetermined region comprises the circumference of a maximum circle on the second surface.

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Claim 34 (Canceled)